



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,061	11/25/2003	Robert Karlsson	740073.462	4156

500 7590 10/05/2006

SEED INTELLECTUAL PROPERTY LAW GROUP PLLC  
701 FIFTH AVE  
SUITE 6300  
SEATTLE, WA 98104-7092

EXAMINER

LAM, ANN Y

ART UNIT	PAPER NUMBER
----------	--------------

1641

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/722,061

**Applicant(s)**

KARLSSON ET AL.

**Examiner**

Ann Y. Lam

**Art Unit**

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 20-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/04, 7/04, 9/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

**DETAILED ACTION**

***Election/Restrictions***

Claims 20-34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention. Election was made **without** traverse in the reply filed on July 13, 2006.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, recites "determining from the determined dissociation-related value or values for the mixture if the contribution to this value or values from the one of the analyte and the reference analyte that has the slower dissociation phase is suppressed..." It is not clear what this determining step comprises. That is, it is not clear what is determined to be suppressed and by what.

Art Unit: 1641

Also, claim 1 recites "stopping the contact of the analyte and the reference analyte with the ligand to permit dissociation therefrom" It is not clear what Applicants mean by "stopping the contact" or how it is done. For examination purposes, it will be interpreted to mean that dissociation, i.e., non-contact, is allowed to take place.

The remainder of the claims are rejected under 112, second paragraph because they depend from claim 1 which is vague and indefinite as indicated above.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magali et al., "Determination of the Association and Dissociation Rate Constants of Muscarinic Antagonists on Rat Pancreas: Rank Order of Potency Varies with Time", Molecular Pharmacology, 36: 405-411, in view of Motulsky et al., "The Kinetics of Competitive Radioligand Binding Predicted by the Law of Mass Action", Molecular Pharmacology, 25:1-9, and further in view of Hargreaves, 6,121,055.

As to claim 1, Applicant claims a method of determining the binding site specificity of an analyte that binds to a ligand having at least two different binding sites. The method essentially comprises determining the dissociation-related values for a

Art Unit: 1641

mixture comprising an analyte and a reference analyte, wherein one of which has a faster dissociation phase and in sufficient concentration to at least substantially inhibit binding to a ligand of the one having the slower dissociation phase.

The amount of binding if a dissociation-related value and thus will be interpreted so. Also, as to the determining step of claim 1, due to the 112, 2<sup>nd</sup> paragraph vagueness regarding the determining step, the determining step is interpreted to mean determining from the dissociation-related value of the mixture (i.e., the amount of binding of the mixture) if the amount of binding of the analyte or reference analyte with the slower dissociation phase is suppressed, wherein substantial suppression indicates that the analyte and the reference analyte bind to the same binding site, and substantial absence of suppression indicating that they bind to different binding sites. That is, the determining step is interpreted to mean determining from the determined dissociation-related value (interpreted to mean the amount of binding) for the mixture, if the amount of binding of the compound with the slower dissociation phase in the mixture is suppressed.

Magali et al. teach a competition assay that suggests that muscarinic receptors bind the antagonist reversibly (see page 409, right column, second paragraph). Magali et al. disclose that trihexyphenidyl (the antagonist) prevents <sup>3</sup>[H]NMS from recognizing with the sites on the muscarinic receptors (see page 409, right column, third paragraph). The trihexyphenidyl is equated to Applicants' claimed analyte, and the <sup>3</sup>[H]NMS is equated to Applicants' claimed reference analyte. Thus, Magali et al. teach determining

Art Unit: 1641

the binding site specificity of the analyte, i.e., that it binds to muscarinic receptors, or alternatively, that it competes for the binding site on the muscarinic receptors.

The amount of binding is deemed to be the claimed dissociation-related value. As indicated above, due to the 112, 2<sup>nd</sup> paragraph vagueness of claim 1 regarding the determining step, the determining step is interpreted to mean determining from the determined dissociation-related value (interpreted to mean the amount of binding) for the mixture, if the amount of binding of the compound with the slower dissociation phase in the mixture is suppressed. In the competition assay disclosed by Magali et al., the amount of binding for the mixture of trihexyphenidyl and  $^3\text{[H]NMS}$  during the competition assay for the muscarinic receptors is determined in relation to the amount of binding of  $^3\text{[H]NMS}$ , as it is determined that trihexyphenidyl prevents  $^3\text{[H]NMS}$  from recognizing with the sites on the muscarinic receptors (see page 409, right column, third paragraph).

However, Magali et al. do not disclose a competition assay wherein one of the analyte and the reference analyte has a faster dissociation phase than the other.

However, Motulsky et al. teach that the amount of binding of a compound in a competitive assay depends on the relative dissociation rate constant of the compound and its competitor and/or on the relative concentration of that compound and its competitor, as shown by the equation and the key to the variables of the equation on page 2, left column (showing that L is the amount of radioligand; I, is the competitor;  $K_2$  is the dissociation rate of radioligand; and  $K_4$  is the dissociation rate of the competitor):

Thus, the fact that trihexyphenidyl prevents  $^3\text{[H]NMS}$  from recognizing with the sites on the muscarinic receptors can be due to the relative concentration of that compound and its competitor and/or the relative dissociation rate constant of the compound and its competitor according to Motulsky et al. Thus while Magali et al. do not disclose that in a competition assay, the compound that prevents another compound from binding, i.e., competing for, the same binding site on a receptor, it would have been obvious that in a competition assay to determine binding specificity, one compound can have a faster dissociation phase, because Motulsky et al. teach that the amount of binding of a compound in a competitive assay depends the relative dissociation rate constant of the compound and its competitor (and/or the relative concentration of that compound and its competitor).

Moreover, Magali et al. teach that in a competitive assay between trihexyphenidyl and NMS for a receptor, if trihexyphenidyl has a larger dissociation rate constant than NMS, then trihexyphenidyl will equilibrate faster than NMS (see page 409, table 2, showing that the dissociation rate constant for trihexylphenidyl is greater than NMS, and see page 409, right column, third full paragraph, showing that trihexyphenidyl will equilibrate faster than NMS; and see page 405, left column, disclosing that,  $k_{\text{off}}$ , and  $k_i$  values are directly correlated-- $k_{\text{off}}$ , is the dissociation rate constant--see page 405, left column), and  $k_i$  is the equilibrium dissociation constant--see top of page 409, left column). It is noted that equilibrate means achieving a state wherein the concentration of bound and unbound X remains constant. Thus, Magali et al. teach that if a compound equilibrates faster, it will have a larger dissociation rate constant than the competing

Art Unit: 1641

compound. The term **dissociation phase** as used by Applicant refers to both the period of time after dissociation has started until dissociation essentially has stopped or at least decreased to considerable degree, and to the behavior of a species or mixture of species bound to the biomolecule and dissociating during this time period (see page 5 of the specification). Thus the meaning of the term dissociation phase as used by Applicant encompasses the time to equilibrate. As discussed above, Magali et al. teach that if a compound equilibrates *faster* (in other words, if it has a *faster* “dissociation phase”), it will have a larger dissociation rate constant than its competitor for the same receptor. Because Motulsky et al. teach that the amount of binding of a compound in a competitive assay depends on the relative dissociation rate constant of the compound and its competitor (and/or the relative concentration of that compound and its competitor), it would have been obvious that if a compound prevents its competitor from binding to the same receptor, then the compound can have a larger dissociation rate constant (or faster “dissociation phase”). That is, competition assays to determine binding specificities encompass assays between compounds that have different dissociation rate constant (or dissociation phase), i.e., one compound having a faster dissociation phase than the other.

As to the limitation regarding stopping the contacting of the analyte and the reference analyte with the ligand to permit dissociation therefrom, this is interpreted to mean allowing the analyte (i.e., trihexyphenidyl) and the reference analyte (i.e.,  $^3\text{[H]NMS}$ ) to not contact, i.e., dissociate from the ligand (i.e., muscarinic receptors).



Art Unit: 1641

Also, neither Magali et al. nor Motulsky et al. teach that the ligand is immobilized to a solid support.

However, Hargreaves teaches that there are several advantages to using a solid phase, i.e., heterogenous assays, instead of homogenous assays. Hargreaves teaches that heterogenous assays offer desirable results because they can be used for low and high molecular weight compounds, are less prone to interferences than homogenous assays, and can be sensitive to subpicomolar analyte concentrations (col. 2, lines 60-67). Hargreaves also gives some examples of solid phases that can be used (col. 23, lines 2-14). It would have been obvious to one of ordinary skill in the art to utilize a solid phase as taught by Hargreaves to perform the competition assay taught by Magali et al. in view of Motulsky et al. because Hargreaves teaches that use of a solid phase, i.e., heterogenous assay, provides certain advantages over homogenous assays, such as being capable of use for low and high molecular weight compounds, being less prone to interferences than homogenous assays and being sensitive to subpicomolar analyte concentrations.

As to claim 2, the reference analyte (i.e.,  $^3\text{[H]NMS}$ ) binds to a known binding site of the ligand (i.e., muscarinic receptors), (see page 409, right column, third paragraph)

As to claim 3, Applicants claim that the dissociation-related value or values comprise the degree of dissociation of at least one predetermined time during the dissociation phase. As to claim 4, Applicants claim that the dissociation-related value or values comprise the variation of the degree of dissociation with time during the dissociation phase or a part thereof. These are shown by Magali et al. because Magali

Art Unit: 1641

et al. teach that trihexyphenidyl (the antagonist) prevents  $^3\text{[H]NMS}$  from recognizing with the sites on the muscarinic receptors (see page 409, right column, third paragraph), and thus Magali et al. disclose determining the degree of dissociation of  $^3\text{[H]NMS}$ .

As to claim 5, Applicants claim that the reference analyte has a faster dissociation phase than that of the analyte. As to claim 7, Applicants claim that the reference analyte has a slower dissociation phase than that of the analyte. As discussed above regarding claim 1, because Motulsky et al. teach that the amount of binding of a compound in a competitive assay depends on the relative dissociation rate constant of the compound and its competitor (and/or the relative concentration of that compound and its competitor), it would have been obvious that if a compound prevents its competitor from binding to the same receptor, then the compound can have a larger dissociation rate constant (or faster "dissociation phase"). That is, competition assays encompass assays between compounds that have different dissociation rate constant (or dissociation phase), i.e., one compound having a faster dissociation phase than the other.

As to claim 9, Applicants claim that the concentration of the one of the analyte and the reference analyte having the slower dissociation phase is kept constant and the concentration of the one having the faster dissociation phase is successively increased, and the influence of the increase on the dissociation phase of the mixture is determined. This would have been obvious to one of ordinary skill in the art because Motulsky et al. teach that competitive binding experiments are commonly performed with a single

Art Unit: 1641

concentration of radioligan and a variety of concentrations of competitor in order to generate a competitive binding curve (see page 2, right column, 5<sup>th</sup> paragraph).

Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magali et al., "Determination of the Association and Dissociation Rate Constants of Muscarinic Antagonists on Rat Pancreas: Rank Order of Potency Varies with Time", Molecular Pharmacology, 36: 405-411, in view of Motulsky et al., "The Kinetics of Competitive Radioligand Binding Predicted by the Law of Mass Action", Molecular Pharmacology, 25:1-9, and in view of Hargreaves, 6,121,055, as applied to claims 1, 5, and 7 above, and further in view of Flatmark et al., "Tyrosine hydroxylase binds tetrahydrobiopterin cofactor with negative cooperativity, as shown by kinetic analyses and surface plasmon resonance detection", Eur. J. Biochem. 262, 840-849 (1999), and Bandman et al., 5,824,500.

As to claim 6, Applicants claim that the association and dissociation phases of the reference analyte are represented by a square wave type binding curve, and the association and dissociation phases of the analyte are represented by a binding curve having visible association and dissociation phases. As to claim 8, Applicants claim that the association and dissociation phases of the analyte are represented by a square wave type binding curve, and the association and dissociation phases of the reference analyte are represented by a binding curve having visible association and dissociation

Art Unit: 1641

phases. As discussed above regarding claim 1, competition assays to determine binding specificity encompass assays between compounds that have different dissociation rate constant (or dissociation phase), i.e., one compound having a faster dissociation phase than the other. Moreover, Flatmark et al. teach that a binding curve which shows that the equilibrium response is reached within seconds, and the signal rapidly returning to the baseline level looks like a square wave (page 844, left column). Furthermore, Bandman et al. teach that screening of compounds having suitable binding affinity to the protein of interest is a technique for drug screening (col. 25, lines 54-56). Thus, it would have been obvious to utilize a competition assay to determine binding specificity as taught by Magali et al. in view of Motulsky et al., for drug screening purposes for example, as taught by Bandman et al. Moreover, it would have been obvious that such competition assays encompass utilizing compounds that would have a square wave curve because Flatmark et al. teach that some compounds will exhibit a square wave binding curve if the time to reach equilibrium is within seconds (i.e., rapid) and the signal also rapidly returning to the baseline.

Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magali et al., "Determination of the Association and Dissociation Rate Constants of Muscarinic Antagonists on Rat Pancreas: Rank Order of Potency Varies with Time", *Molecular Pharmacology*, 36: 405-411, in view of Motulsky et al., "The Kinetics of Competitive Radioligand Binding Predicted by the Law of Mass Action", *Molecular*

Art Unit: 1641

Pharmacology, 25:1-9, and in view of Hargreaves, 6,121,055, as applied to claim 1 above, and further in view of Bandman et al., 5,824,500.

Magali et al. in view of Motulsky et al. and Hargreaves teach the invention substantially as claimed (see above regarding claim 1), except for the method being repeated with at least one other reference analyte that binds specifically to a different binding site on the ligand (claim 10), and except for the ligand being a drug target (claim 18).

However, Bandman et al. teach that various immunoassay may be used for screening to identify antibodies having the desired specificity and that numerous protocols for competitive binding assays using antibodies with established specificities are well known in the art. Bandman et al. teach that a two-site, monoclonal-based immunoassay utilizing monoclonal antibodies reactive to two non-interfering epitopes is preferred, but a competitive binding assay may also be employed (col. 18, lines 33-43.) Bandman et al. teach that screening of compounds having suitable binding affinity to the protein of interest is a technique for drug screening (col. 25, lines 54-56). Thus, repeating the competition method (as described above regarding claim 1) to determine binding specificity of compounds for another binding site on a ligand, such as an antibody for drug screening (as taught by Bandman et al.), using at least one other reference analyte that binds specifically to a different binding site on the ligand would have been obvious to one of ordinary skill in the art because it is known that ligands such as monoclonal antibodies have two binding sites, and Bandman et al. teach that various protocols for competitive binding assays may be employed.

Claims 11-14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magali et al., "Determination of the Association and Dissociation Rate Constants of Muscarinic Antagonists on Rat Pancreas: Rank Order of Potency Varies with Time", Molecular Pharmacology, 36: 405-411, in view of Motulsky et al., "The Kinetics of Competitive Radioligand Binding Predicted by the Law of Mass Action", Molecular Pharmacology, 25:1-9, and in view of Hargreaves, 6,121,055, as applied to claim 1 above, and further in view of Nelson et al., 6,849,397.

Magali et al. in view of Motulsky et al. and Hargreaves teach the invention substantially as claimed except for the solid support being a sensing surface of a biosensor (claim 11), specifically, an optical biosensor (claim 12), more specifically an evanescent wave sensor (claim 13), and surface plasmon resonance (claim 14), or the method being computer implemented (claim 19).

However, Nelson et al. teach surface plasmon resonance imaging techniques provides for a rapid and efficient method for screening specific binding of proteins to large arrays of molecules immobilized at chemically-modified metal surfaces (col. 1, lines 41-45). Moreover, Nelson et al. teach that the technique is computer implemented (see col.10, lines 18-21.) It would have been obvious to one of ordinary skill in the art to utilize surface plasmon resonance sensor (which is an evanescent wave sensor) as taught by Nelson et al. in the method of Magali et al. in view of Motulsky et al. and

Art Unit: 1641

Hargreaves because Nelson et al. teach that such a sensor provides the advantages of a rapid and efficient method for screening specific binding of proteins.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Magali et al., "Determination of the Association and Dissociation Rate Constants of Muscarinic Antagonists on Rat Pancreas: Rank Order of Potency Varies with Time", Molecular Pharmacology, 36: 405-411, in view of Motulsky et al., "The Kinetics of Competitive Radioligand Binding Predicted by the Law of Mass Action", Molecular Pharmacology, 25:1-9, and in view of Hargreaves, 6,121,055, as applied to claim 1 above, and further in view of Lackie, 5,372,783.

Magali et al. in view of Motulsky et al. and Hargreaves teach the invention substantially as claimed except for the analyte and each reference analyte being contacted with the sensing surface in a flow cell.

However, Lackie teaches a flow cell comprising porous masses of light-transparent material disposed within it and a moiety of a respective ligand/conjugate complex, e.g., a specific-binding ligand, being immobilized on the surfaces of each mass (col. 2, lines 26-40), and that in one embodiment the mass comprises beads and that this enhances reactivity because of the high density of binding sites due to the high surface area exposed (col.1, lines 47-54). It would have been obvious to utilize a flow cell with beads as taught by Lackie in the invention of Magali et al. in view of Motulsky et

Art Unit: 1641

al. and Hargreaves because Lackie teaches that this type of solid support provides the advantage of enhancing reactivity.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Magali et al., "Determination of the Association and Dissociation Rate Constants of Muscarinic Antagonists on Rat Pancreas: Rank Order of Potency Varies with Time", Molecular Pharmacology, 36: 405-411, in view of Motulsky et al., "The Kinetics of Competitive Radioligand Binding Predicted by the Law of Mass Action", Molecular Pharmacology, 25:1-9, and in view of Hargreaves, 6,121,055, as applied to claim 1 above, and further in view of Newkirk, 6,100,098.

Magali et al. in view of Motulsky et al. and Hargreaves teach the invention substantially as claimed except for the ligand being serum albumin.

However, Newkirk teaches that to further characterize the binding specificity of an antibody, i.e., anti-IgG-AGE antibody, the antibody's ability to bind to AGE on other proteins such as albumin (col. 8, lines 63-67) as part of a method of analyzing markers for diagnosing certain diseases (see col. 10, lines 10-29 for example.) It would have been obvious to one of ordinary skill in the art to utilize serum albumin as the ligand in the Magali et al. in view of Motulsky et al. and Hargreaves because Newkirk teaches that albumin allows for further characterization of antibodies.



Art Unit: 1641

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Magali et al., "Determination of the Association and Dissociation Rate Constants of Muscarinic Antagonists on Rat Pancreas: Rank Order of Potency Varies with Time", Molecular Pharmacology, 36: 405-411, in view of Motulsky et al., "The Kinetics of Competitive Radioligand Binding Predicted by the Law of Mass Action", Molecular Pharmacology, 25:1-9, and in view of Hargreaves, 6,121,055, as applied to claim 1 above, and further in view of Yan et al., 7,112,326.

Magali et al. in view of Motulsky et al. and Hargreaves teach the invention substantially as claimed except for the ligand being a protein kinase.

However, Yan et al. teach that protein kinases are serve as targets for identifying agents for use in mammalian therapeutic applications, e.g., human drug, particularly in modulating a biological or pathological response in a cell or tissue that expresses the kianse (col. 12, lines 51-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide protein kinase as the ligand in the invention of Magali et al. in view of Motulsky et al. and Hargreaves because Yan et al. teach that protein kinases provide the benefit of serving as targets for identifying agents for human drug.

### ***Conclusion***

Art Unit: 1641

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann Y. Lam whose telephone number is 571-272-0822. The examiner can normally be reached on Mon.-Fri. 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ann Lam

*Oct 11/2006*